



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to NOAA Fisheries No:
2004/00138

September 13, 2004

Ms. Mona Ellison
U.S. Department of Agriculture,
Rural Development
101 SW Main Street, Suite 1410
Portland, Oregon 97204

Re: Endangered Species Act Interagency Consultation and Magnuson-Stevens Fishery
Conservation and Management Act Essential Fish Habitat Consultation for the Seal Rock
Water District Water System Improvements, Lower Yaquina River and Beaver Creek
Watersheds, Lincoln County, Oregon

Dear Ms. Ellison:

The enclosed document contains a conference opinion (Opinion) prepared by NOAA's National Marine Fisheries Service (NOAA Fisheries) pursuant to section 7(a)(2) of the Endangered Species Act (ESA) on the effects of the U.S. Department of Agriculture's Rural Development funding the proposed Seal Rock Water District Water System Improvement projects in Lincoln County, Oregon. In this Opinion, NOAA Fisheries concludes that the proposed action is not likely to jeopardize the continued existence of the Oregon Coast coho salmon (*Oncorhynchus kisutch*) evolutionarily significant unit, which is proposed for listing under the ESA. As required by section 7 of the ESA, NOAA Fisheries included reasonable and prudent measures with nondiscretionary terms and conditions that are necessary to minimize the impact of incidental take associated with the action. However, the incidental take statement does not become effective until NOAA Fisheries adopts this conference opinion as a biological opinion, after the listing is final. Until the time that the species is listed, the prohibitions of the ESA do not apply.

This document also includes the results of our consultation on the action's likely effects on essential fish habitats (EFH) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), and includes conservation recommendations to avoid, minimize, or otherwise offset potential adverse effects to EFH. Section 305(b)(4)(B) of the MSA requires Federal agencies to provide a detailed written response to NOAA Fisheries within 30 days after receiving these recommendations. If the response is inconsistent with the recommendations, the U.S. Department of Agriculture's Rural Development must explain why the recommendations will not be followed, including the justification for any disagreements over the effects of the action and the recommendations.



If you have questions regarding this consultation, please contact Ms. Bridgette Lohrman, Natural Resource Specialist, in the Oregon Coast/Lower Columbia River Habitat Branch of the Oregon State Habitat Office at 503.230.5422.

Sincerely,

Handwritten signature of Michael R. Course in cursive script.

D. Robert Lohn
Regional Administrator

cc: Tom Donaty, Seal Rock Water District
Dave Jepsen, The Dyer Partnership Engineers & Planners, Inc.
Scott English, Northwest Biological Consulting
Tony Stein, ODFW
Mark Everett, COE

Endangered Species Act - Section 7 Consultation Conference Opinion

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Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation

Seal Rock Water District Water System Improvements,
Lower Yaquina River (1710020403) and Beaver Creek (1710020505) Watersheds,
Lincoln County, Oregon

Agency: U.S. Department of Agriculture Rural Development

Consultation
Conducted By: NOAA's National Marine Fisheries Service,
Northwest Region

Date Issued: September 13, 2004

for Michael R. Crouse

Issued by: _____
D. Robert Lohn
Regional Administrator

NOAA Fisheries No.: 2004/00138

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INTRODUCTION

This document prepared by NOAA's National Marine Fisheries Service (NOAA Fisheries) includes a conference opinion (Opinion) and incidental take statement in accordance with section 7(b) the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*), and implementing regulations at 50 C.F.R. 402. The essential fish habitat (EFH) consultation was prepared in accordance with section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 U.S.C. 1801 *et seq.*) and implementing regulations at 50 C.F.R. 600. The administrative record for this consultation is on file at the Oregon State Habitat Office.

Background and Consultation History

On February 10, 2004, NOAA Fisheries received a letter from the U.S. Department of Agriculture (USDA) Rural Development and two biological assessments (BAs). One from Northwest Biological Consulting (December 2002) and a second from The Dyer Partnership Engineers & Planners, Inc. (May 2003) with a written request for concurrence with a finding that funding by the USDA's Rural Development of the Seal Rock Water District Water System Improvements "may affect, not likely to adversely affect" (NLAA) Oregon Coast (OC) coho salmon (*Oncorhynchus kisutch*). The USDA also concluded that the proposed project would not adversely affect designated EFH.

On May 18, 2004, NOAA Fisheries mailed a non-concurrence letter and request for formal consultation to the USDA. NOAA Fisheries did not concur with the action agency's finding that the proposed project is NLAA because one of the projects would require in-water work in a stream, the south tributary of Thiel Creek, that is classified as rearing and migration habitat for OC coho salmon by the Oregon Department of Fish and Wildlife (ODFW).¹ Due to the nature of the construction activities and the habitat designation of the stream, there is potential for incidental take of OC coho salmon.

On June 9, 2004, NOAA Fisheries received a request from the USDA for ESA section 7 formal consultation and EFH consultation for the Seal Rock Water District Water System Improvement projects.

Proposed Action

For purposes of this consultation, the proposed action is the funding by the USDA's Rural Development of nine water improvement projects to be conducted through the Seal Rock Water District (Table 1). The widening of the road and proposed culvert replacement for the For Far Water Main project is the one component of the proposed action likely to have adverse effects on OC coho salmon, however, NOAA Fisheries will consult on all projects that may have an effect on OC coho salmon.

¹ Oregon Department of Fisheries and Wildlife. Fish Habitat Distribution Map for Coho Salmon. January 26, 2004. <http://rainbow.dfw.state.or.us/nrimp/information/fishdistmaps.htm>.

Table 1. Phase I Seal Water District Water System Improvements in Lincoln County, Oregon

Project Name	Action
Lost Creek Reservoir and Water Main	Installation of a new 1.5 million gallon water tank
	Installation of a 1,400-foot water main
	Installation of 5,800 feet of electrical wiring
	Widening of access road to the water tank*
For Far Water Main	Installation of 5,200 feet of 12-inch diameter water main, 280 feet of 4-inch, 6-inch, and 8-inch diameter main
	Installation of 20 service reconnections and associated appurtenances
	Widening of road and consequential culvert replacement on south tributary of Thiel Creek*
South Bay Transmission Main	Installation of 1,280 feet of water pipe and appurtenances. Completed September 2003.
Poole Slough Crossing	Installation of new water main underneath Poole Slough and adjacent wetlands using Horizontal Directional Drilling method
Tank Containment Valves	Installation of tank containment valves at Lost Creek Reservoir and Driftwood 1.0 million gallon reservoir
SCADA (Supervisory Control and Data Acquisition) System	Installation of new electrical equipment housed in small metal cabinets on or beside the District's existing structures or vaults.
Driftwood Reservoir Rehabilitation	Maintenance to repair interior coating of 1.0 million gallon water tank.

* Indicates project that has the potential to adversely affect OC coho salmon and which this consultation focuses on.

Culvert Replacement on South Tributary to Thiel Creek

For the Seal Rock Water District to improve water flows to the Northern portion of the district, a new water main is being installed. To provide access to the water main, a gravel access road on a sharp curve will be widened to allow tractor-trailor vehicles access to the project site. Upon the District proposing this road widening, ODFW suggested replacing the undersized culvert at this sharp curve because it is a fish passage barrier. The applicant proposes to replace the existing 18-inch diameter, 55-foot length galvanized pipe with a new culvert that would meet ODFW fish passage requirements. From consultation between the applicant and ODFW, a new aluminized corrugated steel culvert of 60 feet in length and 48 inches in diameter will be

naturally embedded 12 inches. The total length of the stream reach (including the new culvert pipe) within the construction zone will be approximately 100 feet.

The culvert replacement will take place between late August and the end of September, with instream work occurring for approximately 7 days.²

The work area will be isolated from the active stream flow using a temporary dam and pipe bypass. A screen will be placed upstream and downstream from the culvert to block fish movement before work begins. Water will bypass the construction site through a screened 3- to 4-inch diameter pipe. Fish within the construction zone will be captured either by seining or electrofishing and transported upstream from the construction site. A biologist will perform the fish capture and will be supervised by ODFW if the state agency feels it necessary based on the qualifications of the hired biologist. Approximately 200 cubic yards of material will be excavated and native material and imported aggregated will be used for backfill. The nets in the stream will be removed after the regular stream flow has been re-established and has been running through the new culvert for 48 to 72 hours.

Horizontal Directional Drilling (HDD) of Poole Slough³

The proposed project involves installing approximately 1,250 feet of 20- to 24-inch outer-diameter high density polyethylene (HDPE) pipe beneath Poole Slough and the adjacent marsh area. The HDD entry/launch area will be on the landowner-owned roadway east of the slough. The HDD exit area will be on the landowner-owned road/trail west of the slough, out of the marsh area. The new waterline will be installed at a minimum depth of 30 feet below the channel bottom with the majority of the installation at a minimum depth of 80 feet below the ground surface within the marsh area.

A staging area of approximately 50 feet by 100 feet will be created at the HDD entry location. Removal of vegetation within the temporary construction will include second growth coastal conifer habitat containing small stands of Douglas-fir, hemlock, and Sitka spruce with salmonberry and salal intermixed. This removal will occur outside the riparian area. In addition, gravel will be placed on the site for the purpose of leveling the site. Access to the slope and lower bank on the east side of Poole Slough will be required to allow temporary placement of TruTraker cable for the HDD guidance system.

A staging area of approximately 20 to 24 feet by 20 feet will be created at the HDD exit location on the west side of the slough. Removal of vegetation within the temporary construction area include second growth coastal conifer habitat containing small stands of Douglas-fir, hemlock, and Sitka spruce with salmonberry and salal intermixed. Access to the marsh area between the

² NOAA Fisheries granted an extension to the ODFW in-water work window from September 15 to September 30.

³ Written correspondence from Kimberlie Staheli, Bennett Staheli Engineers, to Bridgette Lohrman, NOAA Fisheries (July 1, 2004).

slough and the exit location will be required to allow temporary placement of TruTraker cable for the HDD guidance system.

A temporary staging area of 20 feet wide by the length of the installation (approximately 1,250 feet) will be required west of the exit location (and up the existing landowner trail/roadway) to facilitate fabrication of the pipeline before pull-back operations.

Drilling fluids, containing bentonite and water, used during the drilling will be either left in the annulus or circulated back to the surface where it will be stored in holding tanks. Any excess material will be hauled to an approved site for disposal. Approximately 200 cubic yards of material will be displaced by the 30-inch drilled hole. This soil will be stored in Baker tanks and taken to an approved site after the work is done.

Staging area construction will occur before HDD activities and is anticipated to occur in September and October of 2004. It is anticipated that the staging area preparation work will be completed within 5 days. Erosion control measures will be implemented before staging area work. The entire HDD work is anticipated to take approximately 35 days.

The entry and exit locations have been selected to minimize the construction activities to be completed within the marsh area. No heavy equipment will be allowed to enter the marsh area. The majority of the equipment will be at the entry location on the east side of the slough.

Proposed Conservation Measures

The USDA has incorporated best management practices (BMPs) into the project design to avoid and minimize effects to OC coho salmon. These measures address erosion control and hazardous materials. The following measures highlight the BMPs provided by the USDA. For further details refer to the BA (pages 66 through 68 in the December 2002 BA; and pages 3-10 through 3-11 in the May 2003 BA).

Erosion Control

1. Silt fences will be installed at equipment access points and anywhere sediment is likely to reach surface waters or wetlands.
2. All soils that will be disturbed during construction activities within seven days of exposure will be stabilized. Stabilization methods will include ground cover seeding, sterile straw mulch, geo-tech fabric, bioengineered slope protection, and other stabilization and cover methods.
3. Erosion controls will be sufficient to ensure that turbidity does not exceed 10% above ambient conditions. If erosion control methods are not adequate to maintain ambient sediment conditions, the scope of the action will be altered or limited to further minimize sediment delivery.

Hazardous Materials

1. No toxicants will be allowed to enter any aquatic resource.
2. No toxicants, including petroleum products, will be stored within 100 feet of any surface water. Areas for fuel storage, refueling, and servicing of construction equipment and vehicles will be at least 100 feet away from any surface water.
3. All equipment will be washed and inspected for hydraulic leaks before transport to the construction site. Once on-site, the equipment will be inspected each morning, before the start of work. Leaking equipment will not be allowed to be operated until any observed leaks are repaired and inspected.

Action Area

‘Action area’ means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 C.F.R. 402.02). For purposes of this consultation, the action area for the culvert replacement project is the south tributary of Thiel Creek, including the streambed, streambank, water column and adjacent riparian zone extending 30 feet upstream and 100 feet downstream from the construction zone. For the HDD under Poole Slough, the action area extends from the western boundary of the staging area on the west side of the slough to the eastern boundary of the staging area on the east side of the slough and encompasses the wetlands, riparian area, and waterbody of Poole Slough within 100 feet on either side of the drilling path.

The action area in the south tributary of Thiel Creek is designated by ODFW as rearing and migration habitat for juvenile OC coho salmon and is designated as EFH for coho and Chinook salmon (PFMC 1999), however, Chinook salmon have not been documented in the south tributary of Thiel Creek. The action area for the Poole Slough project is designated by ODFW as rearing and migration habitat for juvenile and adult OC coho salmon and is designated as EFH for coho and Chinook salmon (PFMC 1999) and Pacific Coast Groundfish (PFMC 1998a) (Table 2).

Table 2. Groundfish and Pacific Salmon Species with Designated EFH in the Estuarine EFH Composite in the State of Oregon.

Groundfish Species	
Leopard Shark (southern OR only)	<i>Triakis semifasciata</i>
Southern Shark	<i>Galeorhinus zyopterus</i>
Spiny Dogfish	<i>Squalus acanthias</i>
California Skate	<i>Raja inornata</i>
Spotted Ratfish	<i>Hydrolagus colliei</i>
Lingcod	<i>Ophiodon elongatus</i>
Cabezon	<i>Scorpaenichthys marmoratus</i>
Kelp Greenling	<i>Hexagrammos decagrammus</i>
Pacific Cod	<i>Gadus macrocephalus</i>
Pacific Whiting (Hake)	<i>Merluccius productus</i>
Black Rockfish	<i>Sebastes maliger</i>
Bocaccio	<i>Sebastes paucispinis</i>
Brown Rockfish	<i>Sebastes auriculatus</i>
Copper Rockfish	<i>Sebastes caurinus</i>
Quillback Rockfish	<i>Sebastes maliger</i>
English Sole	<i>Pleuronectes vetulus</i>
Pacific Sanddab	<i>Citharichthys sordidus</i>
Rex Sole	<i>Glyptocephalus zachirus</i>
Rock Sole	<i>Lepidopsetta bilineata</i>
Starry Flounder	<i>Platichthys stellatus</i>
Pacific Salmon Species	
Chinook Salmon	<i>Oncorhynchus tshawytscha</i>
Coho Salmon	<i>Oncorhynchus kisutch</i>

ENDANGERED SPECIES ACT

Conference Opinion

NOAA Fisheries listed OC coho salmon as threatened under the ESA on August 10, 1998 (63 FR 42587), and issued protective regulations under section 4(d) of the ESA on July 10, 2000 (65 FR 42422). Critical habitat is not designated or proposed for this species.

In September 2001, in the case *Alsea Valley Alliance v. Evans*, U.S. District Court Judge Michael Hogan struck down the 1998 ESA listing of OC coho salmon and remanded the listing decision to NOAA Fisheries for further consideration. In November 2001, the Oregon Natural Resources Council appealed the District Court's ruling. Pending resolution of the appeal, in December 2001, the Ninth Circuit Court of Appeals stayed the District Court's order that voided the OC coho listing. While the stay was in place, the OC coho salmon evolutionarily significant unit (ESU) was again afforded the protections of the ESA.

On February 24, 2004, the Ninth Circuit dismissed the appeal in *Alsea*. On June 15, 2004, the Ninth Circuit returned the case to Judge Hogan and ended its stay. Judge Hogan's order invalidating the OC coho listing is back in force. Accordingly, OC coho are now not listed, and ESA provisions for listed species, such as the consultation requirement and take prohibitions, do not apply to OC coho.

In response to the *Alsea* ruling, NOAA Fisheries released its revised policy for considering hatchery stocks when making listing decisions on June 3, 2004 (69 FR 31354). NOAA Fisheries completed a new review of the biological status of OC coho salmon, and applying the new hatchery listing policy, proposed to list OC coho salmon as a threatened species on June 14, 2004 (69 FR 33102). NOAA Fisheries must make a final decision on the proposed OC coho salmon listing by June 14, 2005.

The objective of this Opinion is to determine whether the Seal Rock Water District water system improvements, to be funded by the USDA's Rural Development, is likely to jeopardize the continued existence of OC coho salmon.

OC Coho Salmon

In contrast to the life history patterns of other Pacific salmonids, coho salmon generally exhibit a relatively simple three-year life cycle. Most coho salmon enter rivers between September and February. Coho salmon river entry timing is influenced by many factors, one of which appears to be river flow. In addition, some coastal stream systems may remain blocked by sandbars for most of the year except winter. In these systems, coho salmon are unable to enter the rivers until sufficiently strong freshets open passages through the bars. Coho salmon spawn from November to January, and occasionally into February and March. Spawning may be delayed particularly under winter drought conditions (Sandercock 1998).

Although each native stock appears to have a unique time and temperature for spawning that theoretically maximizes offspring survival, coho salmon generally spawn at water temperatures within the range of 50 to 55°F (10 to 12.8°C). Spawning occurs in a few third-order streams, but most spawning activity was found in fourth- and fifth-order streams. However, in the upper Toutle and Green Rivers of Washington, coho salmon were found to selectively prefer small streams with flows ranging from 2.9 to 4.0 cubic feet per second (Sandercock 1998). Spawning occurs in tributary streams with a gradient of 3% or less in clean gravel ranging in size from that of a pea to that of an orange. Spawning is concentrated in riffles or in gravel deposits at the downstream end of pools featuring suitable water depth (4 to 8 inches) and velocity (1.0 to 1.8 feet per second) (Sandercock 1998).

The favorable range for coho salmon egg incubation is 50 to 55°F (10 to 12.8°C). Egg incubation is variable depending on environmental conditions (*e.g.*, water temperature). Eggs incubate for approximately 35 to 50 days, and start emerging from the gravel two to three weeks after hatching. Gravel sizes greater than 0.13 inch (3.35 mm) and smaller than 1.06 inches (26.9 mm) correlate well with survival to emergence (Sandercock 1998). Where gravels have a high concentration of fine sediment and sands (up to 50%), survival to emergence is lower.

Following emergence, fry move into shallow areas near the streambanks. As fry grow, they disperse upstream and downstream to establish and defend territories.

Juvenile rearing usually occurs in tributary streams with a gradient of 3% or less, although they may move up to streams of 4% or 5% gradient. Juveniles have been found in streams as small as 3 to 6 feet (1 to 2 meters) wide. At a length of 1.5 to 1.8 inches (38 to 45 millimeters), the fry may migrate upstream a considerable distance to reach lakes or other rearing areas. Rearing requires temperatures of 68°F (20°C) or less, preferably 53 to 58°F (11.7 to 14.4°C). Coho salmon fry are most abundant in backwater pools during spring. During the summer, fry prefer pools featuring adequate cover such as large woody debris, undercut banks, and overhanging vegetation. Juvenile coho salmon prefer to over-winter in large mainstem pools, backwater areas and secondary pools with large woody debris, and undercut bank areas. Coho salmon rear in fresh water for up to 15 months, then typically migrate to the sea as smolts between March and June.

The ideal channel for maximum coho smolt production would have shallow depth (2.8 to 23.6 inches), fairly swift mid-stream flows (2 feet per second), numerous marginal back-eddies, narrow width (1.2 to 2.4 feet), copious overhanging mixed vegetation (to lower water temperatures, provide leaf-fall, and contribute terrestrial insects), and banks permitting hiding places. The early diets of emerging fry include chironomid larvae and pupae. Juvenile coho salmon are carnivorous opportunists that primarily eat aquatic and terrestrial insects. They do not appear to pick stationary items off the substratum.

Estuary residency may vary from less than one month to more than 3.5 months, dependent on fish age and/or size (Miller and Sadro 2003). In Oregon, estuary rearing and outmigration has been observed during non-conventional periods such as fall and winter. Juvenile coho salmon growth in estuaries may be nearly twice that found in freshwater (Miller and Sadro 2003). While living in the ocean, coho salmon remain closer to their river of origin than do Chinook salmon. Nevertheless, coho salmon have been captured several hundred to several thousand miles away from their natal stream (Laufle *et al.* 1986). After about 12 months at sea, coho salmon gradually migrate south and along the coast, but some appear to follow a counter-clockwise circuit in the Gulf of Alaska (Sandercock 1998). Coho salmon typically spend two growing seasons in the ocean before returning to their natal streams to spawn as three year-olds. Some precocious males, called "jacks," return to spawn after only six months at sea.

Status of the ESU

This section defines range-wide biological requirements of the ESU, and reviews the status of the ESU relative to those requirements. The present risk faced by the ESU informs NOAA Fisheries' determination of whether additional risk will 'appreciably reduce' the likelihood that an ESU will survive and recover in the wild. The greater the present risk, the more likely any additional risk resulting from the proposed action's effects on the population size, productivity (growth rate), distribution, or genetic diversity of the ESU will be an appreciable reduction (see, McElhaney *et al.* 2000).

The OC coho salmon ESU includes all naturally-spawned populations of coho salmon in Oregon coastal streams south of the Columbia River and north of Cape Blanco (63 FR 42587; August 10, 1998). Five artificial propagation programs are considered part of the ESU: The North Umpqua River (ODFW stock # 18), Cow Creek (ODFW stock # 37), Coos Basin (ODFW stock #37), Coquille River (ODFW stock # 44), and North Fork Nehalem River (ODFW stock # 32) coho hatchery programs. NOAA Fisheries determined that these artificially propagated stocks are genetically no more than moderately divergent from the natural populations (BRT 2003).

The OC coho salmon ESU has been assessed previously. These reviews concluded the ESU was likely to become endangered in the foreseeable future (Weitkamp *et al.* 1995, Schiewe 1996, Schiewe 1997). The conclusion was based on several risk considerations. Natural production was less than 10% of historic levels and long-term trends were downward. Recruits per spawner showed a continuous decline. Hatchery influences, including out-of-basin transfers, were present in many populations. Recent droughts and changes in ocean production may have reduced run sizes. The primary habitat concern included the significant decrease in habitat capacity from historical levels due to widespread habitat degradation. During poor ocean conditions, only high quality habitat is capable of sustaining the species, and subpopulations dependent on medium and low quality habitats could become extinct.

In 2003, NOAA Fisheries reviewed the status of the OC coho salmon ESU (BRT 2003). Findings indicate that recent increases in spawner escapement levels are likely due to good ocean productivity and the elimination of direct harvest while freshwater productivity continues to decline. Continued degradation of freshwater habitat that results in decreased productivity may lead to localized extinction during the next low ocean productivity cycle. Approximately 30% of the ESU has suffered habitat fragmentation by culverts and thermal barriers, generating concerns about ESU spatial structure. Additionally, the lack of response to favorable ocean conditions for some populations in smaller streams, and the distinct patterns between north and south coast populations may indicate compromised connectivity among populations. The degradation of many lake habitats, and the resultant impacts on several lake populations in the OC coho salmon ESU, also poses risks to ESU diversity. Some reviewers felt recent increases in escapement so closely following years of recruitment failure demonstrated population resilience; however, the majority of reviewers felt high escapements should be maintained for a number of years and the freshwater habitat should demonstrate the capability to support high juvenile production from years of high spawner abundance.

Hatchery closures, reductions in the number of hatchery smolt releases, and improved marking rates of hatchery fish have reduced risks to diversity associated with artificial propagation. The reviewers found high risk in the viable salmonid population (VSP) productivity category, and comparatively lower risk for the other VSP categories. The five hatchery programs included in the ESU are operated by the State of Oregon to provide harvest opportunities. These programs are not managed to contribute to ESU abundance, productivity, spatial structure, or diversity. Two out-of-ESU hatchery programs (the Salmon River [ODFW stock # 33] and Trask River [ODFW stock #34] hatchery programs), however, do not incorporate natural fish into the broodstock and remain a threat to ESU diversity. Collectively, artificial propagation programs in

the ESU provide a slight beneficial effect to ESU abundance, but have neutral or uncertain effects on ESU productivity, spatial structure, and diversity.

Considering the need to understand the long-term viability of OC coho salmon, a simple conceptual model incorporating a trend in habitat quality and cyclical ocean survival may help to understand the prospects for OC coho salmon (Lawson 1993). Short-term increases in OC coho salmon abundance driven by marine survival cycles can mask longer-term downward trends resulting from freshwater habitat degradation or longer-term trends in marine survival that may be a consequence of global climate change. Decreasing harvest rates can temporarily increase escapements while only delaying ultimate extinction. Currently, harvest rates have been reduced to the point where no further meaningful reductions are possible. The current upswing in marine survival is a good thing for OC coho, but will only provide a temporary respite unless other downward trends are reversed. NOAA Fisheries' assessment of the effects of artificial propagation programs on the viability of the ESU concluded that the OC coho ESU in-total is "likely to become endangered in the foreseeable future." On June 14, 2004, NOAA Fisheries proposed the continued listing of OC coho salmon ESU as threatened under the ESA.

Environmental Baseline

The 'environmental baseline' includes the past and present impacts of all Federal, state, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of state or private actions which are contemporaneous with the consultation in process (50 C.F.R. 402.02). For projects that are ongoing actions, the effects of future actions over which the Federal agency has discretionary involvement or control will be analyzed as 'effects of the action.'

NOAA Fisheries describes the environmental baseline in terms of the biological requirements for habitat features and processes necessary to support life stages of the subject ESUs within the action area. When the environmental baseline departs from those biological requirements, the adverse effects of a proposed action on the ESU or its habitat are more likely to jeopardize the listed species or result in destruction or adverse modification of critical habitat (NMFS 1999).

The OC coho ESU considered in this Opinion resides in the action areas. Thus, for the south tributary of Thiel Creek action area, the biological requirements for OC coho salmon are the habitat characteristics that would support successful rearing of OC coho juveniles. These requirements would include good water quality, *i.e.* low turbidity, cool water temperatures, no chemical contamination, and uninhibited access to rearing areas. The action area for the HDD project under Poole Slough is under and beside rearing habitat for OC coho juveniles and a migratory corridor for spawning OC coho salmon adults. The biological requirements for this action area also include good water quality, *i.e.* low turbidity, free from chemical contamination, cool water temperatures, and uninhibited access to rearing and spawning areas.

South Tributary of Thiel Creek

The culvert replacement project would occur on the south tributary to Thiel Creek. Thiel Creek is within the 5th field HUC of Beaver Creek south of Newport, Oregon, however, Thiel Creek is a direct ocean tributary. ODFW has designated the south tributary and the mainstem of Thiel Creek as rearing and migration habitat for OC coho salmon. Spawning and rearing areas have been specifically identified (ODFW 2004) upstream from the confluence of the tributary and the mainstem. In the B.A. a narrative summary provided by ODFW Fish Biologist, Tony Stein, states the following:

“This basin (Thiel Creek) exhibits a large palmated drainage and broad interactive floodplain. There is significant current and historical evidence of beaver presence dominating the majority of the floodplain. With a very low gradient, many Cutthroats were observed. No 0+ age Cutthroat were observed low in the system. An 8-foot diameter corrugated steel culvert is an excellent Hwy 101 crossing. Beach access is good, with adequate spawning gravel present and functional near RM3. Habitat is adequate for coho and Steelhead. Only Cutthroat were observed in the system, and because of poor visibility presence and absence were verified by electrofishing.”

Thiel Creek nor its tributary are listed on the Oregon Department of Environmental Quality Water Quality Impaired 303(d) list (ODEQ 2002). Limited information is available about this stream due to its relative small size. However, Thiel Creek and the southern tributary are considered to be suitable rearing habitat for OC coho juveniles.⁴

Because little information is known and/or publicly available about the usage by OC coho salmon of Thiel Creek and its tributary, the relevance of the environmental baseline to the individual, population, and ESU is difficult to quantify. It is known that the habitat on the southern tributary is sufficient for OC coho juveniles, thus, it would not be unlikely to find them in the stream. Since this ocean tributary system has not been studied extensively, it can be assumed that the number of individuals which use these streams is relatively small and perhaps ephemeral.

From a site visit, the action area is physically limited to juvenile OC coho salmon because of the impassable culvert at the site. Upstream from the culvert, the stream is well-shaded and below the culvert the stream meanders through a wetland of tall grasses. The impact of the culvert itself, along with potential other culvert barriers, may be contributing to the ephemerality of OC coho salmon in the stream.

⁴ Personal communication from Tony Stein, ODFW Assistant District Fish Biologist, with Bridgette Lohrman, NOAA Fisheries, (July 15, 2004).

Poole Slough

Poole Slough is approximately 4 river miles upstream from the mouth of the Yaquina River. It is the largest slough on Yaquina Bay, and this extensive estuarine habitat extends several miles inland and follows the course of Wright Creek. Yaquina Bay is 4,349 acres in size, while Lower Poole Slough is approximately 1800 acres. Poole Slough is one of the largest and least-disturbed estuarine systems on the Oregon coast, and provides excellent refugia for fish and wildlife.

The following information is in the BA as to the current condition of Poole Slough:

The tideland communities characteristic of marshes on tidal flats associated with Poole Slough, is generally dominated by tufted hairgrass, often with Baltic rush, Pacific silverweed, pickleweed, and seashore saltgrass, as co-dominants. The streambanks along the slough in the vicinity of the proposed project appear to be relatively undisturbed. The slough is not blocked by tidegates, or other physical barriers, and there is unrestricted access to the slough and upstream into Wright Creek, regarding fish migration. The slough contains many off-channel tidal habitat and the pool quality of this large body of estuarine water is deep and complex with clumps of large woody debris evident near the project area. No specific data on sediment and substrate is available, due to the extensive tidal mudflats present within the action area.

Vegetation of uplands surrounding Poole Slough consists of Sitka spruce dominated rain forests with associated communities of Douglas-fir, Western red cedar, Western hemlock, Big-leaf maple, and Red alder. Logging and silvicultural activities within these forests have significantly changed the natural succession of the forested plant communities. However, the riparian vegetation bordering the slough and the tidal marsh in the proposed action area appears to be in good condition.

The water temperature is cool, as you would expect from the influx of cold ocean water that is mixed with freshwater in the estuary. The overall water quality of the slough appears to be good, with the exception of bacteria. The Oregon Department of Environmental Quality has listed the tidal portion of Poole Slough in their water quality limited 303(d) list due to high fecal bacteria readings.

Poole slough provides tidal habitats to OC coho juvenile salmon that offer a food rich environment, refuge from predators in the murky, shallow waters, and a mixed salinity zone that allow the young salmon to make the physiological transition between fresh and salt water environments. Adults use the slough as a migratory corridor for reaching spawning grounds identified by ODFW in Wright Creek.

A recent estimate of average annual abundance of wild coho salmon spawners in the Yaquina River basin is 4,252 fish (1990 to 2003) with a range of 365 spawners (1998) to 23,981 spawners (2002) (ODFW 2004) (Table 3). Final estimates in 2003 show drop in the number of spawners by almost half from 2002, however, the number of spawners is still higher than in any year

before 2002 (ODFW 2004). Recent increases have been attributed to conservation efforts (*e.g.*, habitat restoration and harvest restrictions) and favorable ocean conditions, which are known to be cyclic.

Timing of adult coho salmon river entry is largely influenced by river flow. In the Yaquina subbasin, adults typically enter rivers between September and mid-January, with peak migration occurring in October (Weitkamp *et al.* 1995) (Table 4). Spawning occurs from October to February, with peak spawning occurring in late-November (Weitkamp *et al.* 1995). Intragravel residency (egg to fry) varies greatly between river basins and reaches, and is largely dependent on substrate composition and water temperature (Sandercock 1998). No specific information is available on intragravel residence timing in Poole Slough. However, a study done in Oregon coastal streams found an average incubation period of 110 days, with emergence typically occurring 2 to 3 weeks following hatch (Sandercock 1998). This suggests a 4 to 5 month intragravel residency period. Seaward migration of juveniles occurs during the spring. Juvenile outmigration occurs from February through May, with peak migrations occurring from March through April (Weitkamp *et al.* 1995).

Table 3. Naturally-Produced Coho Salmon Spawning Populations in the Project Area (source: ODFW 2004)

Year	Estimated Wild Coho Population		
	Yaquina River Basin		OC ESU
	Number of fish	Est. % of ESU	Number of fish
1990	381	5	16,510
1991	380	5	29,078
1992	633	8	38,604
1993	549	2	44,266
1994	2,448	10	37,477
1995	5,668	15	41,303
1996	5,127	10	59,453
1997	384	5	14,068
1998	365	4	19,918
1999	2,588	10	34,696
2000	647	8	54,085
2001	3,039	3	147,981
2002	23,981	12	229,495
2003	13,254	11	206,286
Average	4,252	8	69,516

Table 4. Life History Timing for OC Coho Salmon in the Yaquina River Subbasin (Weitkamp *et al.* 1995, Sandercock 1998). Dark shading indicates peak occurrence of life history event. Medium shading indicates increasing or declining occurrence of life history period or the herbicide application period, as appropriate. Light shading indicates onset or conclusion of life history period. Exceptions may exist that would allow individual fish to fall outside of the indicated periods.

Period of Life History Event	Calendar Year (month)											
	J	F	M	A	M	J	J	A	S	O	N	D
River Entry												
Spawning												
Intragravel Development ⁽¹⁾												
Juvenile Rearing												
Juvenile Out-migration												

(1) Based on spawning period (Weitkamp *et al.* 1995) and a 4-5 week intergravel development period (Sandercock 1998).

The environmental baseline for Poole Slough could be considered very good because of habitat forming processes which are largely intact and the removal or deterioration of all tidegates so that tidal flow has been restored (Brophy 1999) making the slough the largest remaining intact tidal marsh in the Yaquina estuary. The number of OC coho which spawn in the Yaquina River basin is, on average, 8%, but has been as high as 15% of the total ESU. This indicates the importance of the Yaquina river estuary to OC coho production.

Effects of the Action

‘Effects of the action’ means the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline (50 C.F.R. 402.02). If the proposed action includes offsite measures to reduce net adverse impacts by improving habitat conditions and survival, NOAA Fisheries will evaluate the net combined effects of the proposed action and the offsite measures as interrelated actions.

‘Interrelated actions’ are those that are part of a larger action and depend on the larger action for their justification; ‘interdependent actions’ are those that have no independent utility apart from the action under consideration (50 C.F.R. 402.02). Future Federal actions that are not a direct effect of the action under consideration, and not included in the environmental baseline or treated as indirect effects, are not considered in this Opinion.

‘Indirect effects’ are those that are caused by the proposed action and are later in time, but still are reasonably certain to occur (50 C.F.R. 402.02). Indirect effects may occur outside the area

directly affected by the action, and may include other Federal actions that have not undergone section 7 consultation but will result from the action under consideration.

Effects on OC Coho Salmon and Their Habitat

Potential effects of the proposed action on OC coho salmon include: (1) Increased turbidity from construction activities; (2) increased stream temperature from riparian vegetation removal; (3) chemical contamination from construction activities; and (4) direct take, harm or disturbance during in-water work. Long-term benefits are expected from the culvert replacement on the south tributary of Thiel Creek for OC coho salmon.

Turbidity

The effects of suspended sediment and turbidity on fish, as reported in the literature, range from beneficial to detrimental. Elevated total suspended solids (TSS) conditions have been reported to enhance cover conditions, reduce piscivorous fish/bird predation rates, and improve survival. Elevated TSS conditions have also been reported to cause physiological stress, reduce growth, and adversely affect survival. Of key importance in considering the detrimental effects of TSS on fish are the frequency and the duration of the exposure, not just the TSS concentration.

Behavioral avoidance of turbid waters may be one of the most important effects of suspended sediments (DeVore *et al.* 1980; Birtwell *et al.* 1984; Scannell 1988). Salmonids have been observed to move laterally and downstream to avoid turbid plumes (Sigler *et al.* 1984; Lloyd 1987; Scannell 1988; Servizi and Martens 1991). Juvenile salmonids avoid streams that are chronically turbid, such as glacial streams or those disturbed by human activities, unless the fish need to traverse these streams along migration routes (Lloyd 1987).

Turbidity from the culvert replacement and HDD under Poole Slough is expected to be minor and limited in space and time. Isolating the work area during culvert replacement and stream channel reconstruction, along with the proposed construction best management practices will minimize any generation of turbidity; however, reintroduction of the water to the newly-developed culvert and streambed may increase turbidity for a short period of time. For the installation of the waterline under Poole Slough, the decision to use the HDD method is one measure to limit excessive sediment into the slough. However, sedimentation into the slough may occur from construction staging areas, especially on the west-side of the slough where the HDD exit location is approximately 20 feet from the waterline.

Temperature

A reduction in shade will occur on the south tributary of Thiel Creek within the construction zone. The north side of the culvert is shaded by low-lying brush and red alders in the riparian area. Some trees are expected to be removed during construction for the placement of the larger culvert. The stream on the south side of the culvert meanders through tall grass which will likely be undisturbed. Thus, a short-term and minor change in stream temperature is likely to occur from the culvert replacement project.

Chemical Contamination

As with all construction activities, accidental release of fuel, oil, and other contaminants may occur. Operation of the backhoes, excavators, and other equipment requires the use of fuel, lubricants, *etc.*, which, if spilled into the channel of a waterbody or into the adjacent riparian zone, can injure or kill aquatic organisms. Petroleum-based contaminants, such as fuel, oil, and some hydraulic fluids, contain poly-cyclic aromatic hydrocarbons (PAHs), which can be acutely toxic to salmonids at high levels of exposure and can also cause chronic lethal and acute and chronic sublethal effects to aquatic organisms (Neff 1985). The potential for chemical contamination during the culvert replacement and the HDD under Poole Slough is minor, however, anytime construction machinery is being used in, under, or alongside a stream channel and its associated riparian habitat, the potential for chemical contamination is present. For the culvert replacement, construction activities in the stream would take place only after the area has been isolated, thus, probability of direct mortality is negligible. The HDD under Poole Slough, as designed, avoids any work within the slough or wetland, however, the drilling itself and excavation equipment near the slough and adjacent tidal wetlands will increase the potential for chemical contamination.

Handling Injury and Mortality of OC Coho Juveniles

As a result of the culvert replacement, the south tributary of Thiel Creek will be screened off from fish and the water rerouted during the construction period. Rescue, salvage, and relocation of fish and other aquatic species will result in the potential capture and handling of juvenile (predominately age-0) coho salmon. NOAA Fisheries assumes a 5% direct or delayed mortality rate from capture and relocation stress. NOAA Fisheries does not expect the fish stranded in reaches isolated by channel abandonment to survive unless they are relocated.

An incremental change in the likelihood of survival and recovery for the OC coho ESU considered in this consultation due to the proposed action cannot be quantified. However, based on the effects described above, it is reasonably likely that the proposed action will have a short-term, local, negative effect on OC coho salmon individuals within the action area, but, in the long-term will have a beneficial effect on OC coho salmon because a fish barrier will be removed on a stream that is designated as OC coho salmon habitat. The proposed project is not likely to have any larger effect on the survival of OC coho salmon at the population or ESU scale.

Cumulative Effects

‘Cumulative effects’ are those effects of future state or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation (50 C.F.R. 402.02). Cumulative effects that reduce the capacity of listed ESUs to meet their biological requirements in the action area increase the risk to the ESU that the effects of the proposed action on the ESU or its habitat will result in jeopardy (NMFS 1999).

NOAA Fisheries is not aware of any specific future non-Federal activities within the action areas that would alter the environmental baseline, however, non-Federal activities within the action are

likely to increase with a projected 9.4% increase in human population of Lincoln County between the years 2000 and 2015 (ODAS 2004). Thus, NOAA Fisheries assumes that future private and state actions will continue within the action area, increasing as population density rises. As the human population in the action area continues to grow, demand for agricultural, commercial, or residential development is also likely to grow. The effects that new development have that are caused by that demand are likely to further reduce the conservation value of habitat within the action areas.

Although quantifying an incremental change in survival for the OC coho ESU considered in this consultation due to the cumulative effects is not possible, it is reasonably likely that those effects within the action area will have a negligible effect on the likelihood of their survival and recovery.

Conclusion

After reviewing the best available scientific and commercial information regarding the biological requirements and the status of the OC coho ESU considered in this Opinion, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, NOAA Fisheries' concludes that the action, as proposed, is not likely to jeopardize the continued existence of this species.

These conclusions are based on the following considerations:

1. During the replacement of the culvert on the south tributary to Thiel Creek, all fish will be relocated from the construction area, thus minimizing impacts to OC coho salmon.
2. An ODFW-approved biologist will be on-site during the fish capture and relocation activities.
3. Water will be allowed to flow through the newly-constructed culvert for 48 to 72 hours before fish are reintroduced downstream from the culvert, thus minimizing turbidity impacts.
4. The culvert replacement will take place over a relatively short time-frame of 7 days or less.
5. The placement of the new waterline under Poole Slough will be done using conservation measures to ensure that all likely adverse effects will be local, minor, and short-term.

Reinitiation of Consultation

Reinitiation of formal consultation is required and shall be requested by the Federal agency or by the Service, where discretionary Federal involvement or control over the action has been retained or is authorized by law and: (a) If the amount or extent of taking specified in the incidental

take statement is exceeded; (b) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (c) If the identified action is subsequently modified in a manner that has an effect to the listed species or critical habitat that was not considered in the biological opinion; or (d) If a new species is listed or critical habitat designated that may be affected by the identified action (50 C.F.R. 402.16).

To reinstate consultation, contact the Oregon State Office Habitat Office of NOAA Fisheries and refer to the NOAA Fisheries Number: 2004/00138.

Incidental Take Statement

Section 9(a)(1) of the ESA prohibits the taking of listed species without a specific permit or exemption. Protective regulations adopted pursuant to section 4(d) extends the prohibition to threatened species. Among other things, an action that harasses, wounds, or kills an individual of a listed species or harms a species by altering habitat in a way that significantly impairs its essential behavioral patterns is a taking (50 C.F.R. 222.102). Incidental take refers to takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant (50 C.F.R. 402.02). Section 7(o)(2) exempts any taking that meets the terms and conditions of a written incidental take statement from the taking prohibition.

An incidental take statement specifies the effect of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize adverse effects and sets forth terms and conditions with which the action agency must comply to implement the reasonable and prudent measures. However, the incidental take statement included in this conference opinion does not become effective until NOAA Fisheries adopts the conference opinion as a biological opinion, after the listing is final. Until the time that the species is listed, the prohibitions of the ESA do not apply.

Amount or Extent of Take

NOAA Fisheries expects incidental take to occur for the proposed action of replacing the culvert on the south tributary of Thiel Creek because of habitat-related effects of this action will injure, kill, or harm OC coho salmon as follows. Instream work will temporarily increase sediment, turbidity, and other pollutants in the water once the streamflow is redirected back through the newly-constructed culvert. This will cause most fish to avoid the action area, although some juvenile fish are likely to be injured or killed because of this exposure due to reduced feeding and growth rates. Further, the project is likely to modify or destroy riparian vegetation, streambanks, and current channel conditions that presently provide shade, organic matter contributions, bank stability and seasonally suitable microhabitat for holding, feeding, and resting as required for juvenile rearing. Vegetation and streambank characteristics in the action area will require years to recover and return to a status of productively contributing to rearing and migration habitat.

Take caused by these habitat-related effects cannot be accurately quantified as a number of fish, in part because the connection between short-term loss of habitat resulting in injury or death of individuals may be more insidious than the direct loss of a certain number of individuals. In such circumstances, NOAA Fisheries provides a habitat surrogate to quantify the extent of incidental take. For this project, the extent of take will be limited to the loss of rearing and migration habitat that will occur 20 feet upstream and 20 feet downstream from the current pipe. Loss of habitat includes riparian, bank, and channel habitat functions which will be displaced or destroyed by construction activities related to replacing the culvert.

Further, NOAA Fisheries anticipates that juvenile individuals of OC coho ESU will be injured or killed as a result of capture and release efforts associated with work area isolation. Even though a rapid bio-assessment survey was conducted on this stream in 2001 and no juvenile OC coho were counted at that time, ODFW classifies this stream as OC coho juvenile rearing and migration habitat thus OC coho juvenile take may occur and is exempted for this project of 5% of 100 individuals. Should any of these limits be exceeded during project activities, the reinitiation provisions of this Opinion apply.

Reasonable and Prudent Measures

Reasonable and prudent measures are non-discretionary measures to avoid or minimize take that must be carried out by cooperators for the exemption in section 7(o)(2) to apply. The USDA Rural Development has the continuing duty to regulate the activities covered in this incidental take statement where discretionary Federal involvement or control over the action has been retained or is authorized by law. The protective coverage of section 7(o)(2) may lapse if the USDA Rural Development fails to exercise its discretion to require adherence to terms and conditions of the incidental take statement, or to exercise that discretion as necessary to retain the oversight to ensure compliance with these terms and conditions. Similarly, if any applicant fails to act in accordance with the terms and conditions of the incidental take statement, protective coverage may lapse. The following reasonable and prudent measures are necessary and appropriate to minimize the impact on listed species of incidental taking caused by take of listed species resulting from completion of the proposed action.

The USDA Rural Development shall:

1. Minimize the amount and extent of incidental take from general construction activities by avoiding or minimizing adverse effects to riparian and aquatic systems.
2. Minimize incidental take from fish salvage and relocation activities.
3. Ensure completion of a monitoring and reporting program to confirm this Opinion is meeting its objective of limiting the extent of take and minimizing take from permitted activities.

Terms and Conditions

To be exempt from the prohibitions of section 9 of the ESA, the USDA Rural Development and its cooperators, including the applicant, if any, must comply with the following terms and conditions, that implement the reasonable and prudent measures described above. Partial compliance with these terms and conditions may invalidate this take exemption, result in more take than anticipated, and lead NOAA Fisheries to a different conclusion regarding whether the proposed action will result in jeopardy or the destruction or adverse modification of critical habitats.

1. To implement Reasonable and Prudent Measure #1, the USDA Rural Development shall ensure that:
 - a. Project Design. The design of this project must be reviewed to ensure that impacts to natural resources have been avoided, minimized and mitigated, and that the following overall project design conditions are met.
 - i. Minimum area. Construction impacts will be confined to the minimum area necessary to complete the project.
 - ii. In-water work. In-water work will be completed between July 15 and September 30. An in-water work extension was granted extending the in-water work window from September 15 to September 30.
 - iii. Work period extensions. Any further extensions of the in-water work period must be approved in writing by biologists from NOAA Fisheries.
 - b. Pollution and Erosion Control Plan. Prepare and carry out a pollution and erosion control plan to prevent pollution caused by construction activities in riparian and upland areas. The plan must be available for inspection on request by USDA or NOAA Fisheries.
 - i. Plan Contents. The pollution and erosion control plan will contain pertinent elements listed below, and meet requirements of all applicable laws and regulations.
 - (1) The name and address of the party(s) responsible for accomplishment of the pollution and erosion control plan.
 - (2) Practices to prevent erosion and sedimentation associated with streambank grading, equipment and material storage sites, fueling operations, and staging areas. A sediment or silt curtain must be installed and maintained on the downslope site of the bank grading activities. Seeding outside of the growing season will not be considered adequate nor permanent stabilization.
 - (3) A description of any regulated or hazardous products or materials that will be used for the project, including procedures for inventory, storage, handling, and monitoring.
 - (4) A spill containment and control plan with notification procedures, specific cleanup and disposal instructions for different products, quick response containment and cleanup measures that will be

- available on the site, proposed methods for disposal of spilled materials, and employee training for spill containment.
- (5) Practices to prevent construction debris from dropping into the creek, and to remove any material that does drop with a minimum disturbance to the riverbed and water quality.
- ii. Inspection of erosion controls. During construction, monitor instream turbidity and inspect all erosion controls weekly during the dry season, or more often as necessary, to ensure that erosion controls are working adequately.⁵
 - (1) If monitoring and inspection shows that the erosion controls are ineffective, mobilize work crews immediately to make repairs, install replacements, or install additional controls as necessary.
 - (2) Remove sediment from erosion controls once it has reached 1/3 of the exposed height of the control.
- d. Pre-construction activities. The following actions must be completed before significant⁶ alteration of the project area.
 - i. Marking. Flag the boundaries of clearing limits associated with site access and construction to prevent ground disturbance of critical riparian vegetation, wetlands, and other sensitive sites beyond the flagged boundary.
 - ii. Emergency erosion controls. Ensure that the following materials for emergency erosion control are onsite.
 - (1) A supply of erosion control materials (*e.g.*, silt fence and straw bales) is on hand to respond to sediment emergencies. Sterile straw or hay bales will be used when available to prevent introduction of weeds.
 - (2) An oil-absorbing, floating boom is available on-site during all phases of construction whenever surface water is present.
 - iii. Temporary erosion controls. All temporary erosion controls (*e.g.*, straw bales, silt fences) are in place and appropriately installed downslope of project activities within the riparian area. Effective erosion control measures will be in place at all times during the contract, and will remain and be maintained until such time that permanent erosion control measures are effective.
 - e. Heavy Equipment. Restrict use of heavy equipment as follows.
 - i. Choice of equipment. When heavy equipment will be used, the equipment selected will have the least adverse effects on the environment (*e.g.*, minimally-sized, rubber-tired, low ground pressure equipment).

⁵ 'Working adequately' means that project activities do not increase ambient stream turbidity by more than 10% above background 50 feet below the discharge, when measured relative to a control point immediately upstream from the turbidity-causing activity.

⁶ 'Significant' means an effect can be meaningfully measured, detected or evaluated.

- ii. Vehicle and material staging. Store construction materials, and fuel, operate, maintain, and store vehicles as follows.
 - (1) To reduce the staging area and potential for contamination, ensure that only enough supplies and equipment to complete a specific job will be stored on-site.
 - (2) Complete vehicle staging, cleaning, maintenance, refueling, and fuel storage in a vehicle staging area placed 150 feet or more from any stream, waterbody or wetland, unless otherwise approved in writing by NOAA Fisheries.
 - (3) Inspect all vehicles operated within 150 feet of any stream, waterbody or wetland daily for fluid leaks before leaving the vehicle staging area. Repair any leaks detected in the vehicle staging area before the vehicle resumes operation. Document inspections in a record that is available for review on request by USDA or NOAA Fisheries.
 - (4) Diaper all stationary power equipment (e.g., generators) operated within 150 feet of any stream, waterbody or wetland to prevent leaks, unless suitable containment is provided to prevent potential spills from entering any stream or waterbody. Complete vehicle staging, cleaning, maintenance, refueling, and fuel storage in a vehicle staging area placed a minimum of 150 feet from any stream, waterbody, or wetland, unless otherwise approved in writing by NOAA Fisheries.
- f. Site preparation. Native materials must be conserved on site for site restoration.
 - i. If possible, leave native materials where they are found.
 - ii. If materials are moved, damaged or destroyed, replace them with a functional equivalent during site restoration.
 - iii. Stockpile all large wood⁷ taken from below ordinary high water and from within 150 feet of a stream, waterbody or wetland, native vegetation, weed-free topsoil, and native channel material displaced by construction for use during site restoration.
- g. Earthwork. Earthwork, including excavation, filling and compacting, must be completed as quickly as possible. Stabilize all disturbed areas following any break in work unless construction will resume within 4 days.

⁷ 'Large wood' means a tree, log, or rootwad big enough to dissipate stream energy associated with high flows, capture bedload, stabilize streambanks, influence channel characteristics, and otherwise support aquatic habitat function, given the slope and bankfull channel width of the stream in which the wood occurs. See, Oregon Department of Forestry and Oregon Department of Fish and Wildlife, A Guide to Placing Large Wood in Streams, May 1995 (www.odf.state.or.us/FP/RefLibrary/LargeWoodPlacemntGuide5-95.doc).

2. To implement reasonable and prudent measure #2 (fish salvage and relocation), the USDA shall ensure that:
- a. Seining. If the fish-salvaging aspect of this project requires the use of seine equipment to capture fish, it must be accomplished as follows.
 - i. Seining will be conducted by, or under the supervision of a fishery biologist experienced in such efforts. Staff working with the seining operation must have the necessary knowledge, skills, and abilities to ensure the safe handling of all ESA-listed fish.
 - ii. ESA-listed fish must be handled with extreme care and kept in water to the maximum extent possible during seining and transfer procedures. The transfer of ESA-listed fish must be conducted using a sanctuary net that holds water during transfer, whenever appropriate, to prevent the added stress of an out-of-water transfer.
 - iii. Seined fish must be released as near as possible to capture sites.
 - iv. The USDA shall ensure that the transfer of any ESA-listed fish to third parties other than NOAA Fisheries personnel receives prior approval from NOAA Fisheries.
 - v. The USDA shall ensure that any other Federal, state, and local permits and authorizations necessary for the conduct of the seining activities will be obtained before project seining activity.
 - vi. The USDA must allow NOAA Fisheries or its designated representative to accompany field personnel during the seining activity, and allow such representative to inspect the seining records and facilities.
 - vii. A description of any seine and release effort will be included in a post-project report, including the name and address of the supervisory fishery biologist, methods used to isolate the work area and minimize disturbances to ESA-listed species, stream conditions before and following placement and removal of barriers, the means of fish removal, the number of fish removed by species, the condition of all fish released, and any incidence of observed injury or mortality.
 - b. Electrofishing. If the fish salvaging aspect of this project requires the use of electrofishing equipment to capture fish, it must be accomplished as follows (NMFS 2000).
 - i. Electrofishing may not occur near listed adults in spawning condition or near redds containing eggs.
 - ii. Equipment must be in good working condition. Operators must go through the manufacturer's preseason checks, follow all provisions, and record major maintenance work in a log.
 - iii. A crew leader having at least 100 hours of electrofishing experience in the field using similar equipment must train the crew. The crew leader's experience must be documented and available for confirmation; such documentation may be a logbook. The training must occur before an

inexperienced crew begins any electrofishing; it must also be conducted in waters that do not contain listed fish.

- iv. Measure conductivity and set voltage as follows:

<u>Conductivity (umhos/cm)</u>	<u>Voltage</u>
Less than 100	900 to 1100
100 to 300	500 to 800
Greater than 300	150 to 400

- v. Direct current (DC) must be used at all times.
- vi. Each session must begin with pulse width and rate set to the minimum needed to capture fish. These settings should be gradually increased only to the point where fish are immobilized and captured. Start with pulse width of 500 us and do not exceed 5 milliseconds. Pulse rate should start at 30Hz and work carefully upwards. In general, pulse rate should not exceed 40 Hz, to avoid unnecessary injury to the fish.
- vii. The zone of potential fish injury is 0.5 meters from the anode. Care should be taken in shallow waters, undercut banks, or where fish can be concentrated because in such areas the fish are more likely to come into close contact with the anode.
- viii. The monitoring area must be worked systematically, moving the anode continuously in a herringbone pattern through the water. Do not electrofish one area for an extended period.
- ix. Crew members must carefully observe the condition of the sampled fish. Dark bands on the body and longer recovery times are signs of injury or handling stress. When such signs are noted, the settings for the electrofishing unit may need adjusting. Sampling must be terminated if injuries occur or abnormally long recovery times persist.
- x. Whenever possible, a block net must be placed below the area being sampled to capture stunned fish that may drift downstream.
- xi. The electrofishing settings must be recorded in a logbook along with conductivity, temperature, and other variables affecting efficiency. These notes, with observations on fish condition, will improve technique and form the basis for training new operators.
- c. After completion of the project the new channel should be watered in a way that will not significantly impact water quality or cause fish stranding.
3. To implement reasonable and prudent measure #3 (monitoring and reporting), the USDA shall:
- a. Implementation monitoring. Provide NOAA Fisheries with a monitoring report within 30 days of project completion describing the USDA's success meeting these terms and conditions. This report will consist of the following information.
- i. Project identification.

- (1) Project name.
 - (2) Type of activity.
 - (3) Project location.
 - (4) USDA contact person.
 - (5) Starting and ending dates for work completed.
- ii. Photo documentation. Photos of habitat conditions at the project site, before, during, and after project completion.⁸
 - (1) Include general views and close-ups showing details of the project and project area, including pre and post construction.
 - (2) Label each photo with date, time, project name, photographer's name, and a comment about the subject.
- iii. Other data. Additional project-specific data.
 - (1) Amount or Extent of Take. The actual number of feet of riparian habitat that was disturbed or destroyed by the construction activities.
 - (2) Pollution control. A summary of pollution and erosion control inspections, including any erosion control failure, contaminant release, and correction effort.
 - (3) Isolation of in-water work area, capture and release.
 - (a) Supervisory fish biologist – name and address.
 - (b) Methods of work area isolation and take minimization.
 - (c) Stream conditions before, during and within one week after completion of work area isolation.
 - (d) Means of fish capture.
 - (e) Number of fish captured by species.
 - (f) Location and condition of all fish released.
 - (g) Any incidence of observed injury or mortality of listed species.
- b. Salvage notice. The following notice is included as a permit condition:

NOTICE. If a sick, injured or dead specimen of a threatened or endangered species is found, the finder must notify the Vancouver Field Office of NOAA Fisheries Law Enforcement at 360/ 418-4246. The finder must take care in handling of sick or injured specimens to ensure effective treatment, and in handling dead specimens to preserve biological material in the best possible condition for later analysis of cause of death. The finder also has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not disturbed unnecessarily.

⁸ Relevant habitat conditions may include characteristics of channels, eroding and stable streambanks in the project area, riparian vegetation, water quality, flows at base, bankfull and over-bankfull stages, and other visually discernable environmental conditions at the project area, and upstream and downstream from the project.

MAGNUSON-STEVEN'S FISHERY CONSERVATION AND MANAGEMENT ACT

The consultation requirements of section 305(b) MSA directs Federal agencies to consult with NOAA Fisheries on all actions, or proposed actions, that may adversely affect EFH. Adverse effects include the direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality or quantity of EFH. Adverse effects to EFH may result from actions occurring within EFH or outside EFH, and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 C.F.R. 600.810). Section 305(b) also requires NOAA Fisheries to recommend measures that may be taken by the action agency to conserve EFH.

The Pacific Fishery Management Council designated EFH for groundfish (PFMC 1998a), coastal pelagic species (PFMC 1998b), and Chinook salmon, coho salmon, and Puget Sound pink salmon (PFMC 1999). The proposed action and action areas for this consultation are described in the Introduction to this document. The action areas includes areas designated as EFH for various life-history stages of Chinook and coho salmon (PFMC 1999) and Pacific Coast groundfish (PFMC 1998a). However, Chinook salmon have not been documented in either of the action areas.

The effects of the proposed action on EFH are described in detail in the Effects of the Action section of this document. The proposed action may result in short-term adverse effects on a variety of habitat parameters. These adverse effects are:

1. Riparian disturbance from construction activities occurring near the stream or slough.
2. Increased sedimentation from instream or nearstream construction activities.
3. Temporary decreases in stream shade.

EFH Conservation Recommendations

NOAA Fisheries believes that the Terms and Conditions 1 (a-g) contained in the Incidental Take Statement of this Opinion are applicable to salmon and groundfish EFH. Therefore, NOAA Fisheries incorporates each of those measures here as EFH conservation recommendations.

Statutory Response Requirement

Federal agencies are required to provide a detailed written response to NOAA Fisheries' EFH conservation recommendations within 30 days of receipt of these recommendations [50 C.F.R. 600.920(j)(1)]. The response must include a description of measures proposed to avoid, mitigate, or offset the adverse affects that the activity has on EFH. If the response is inconsistent with the EFH conservation recommendations, the response must explain the reasons for not following the recommendations, including the scientific justification for any disagreements over the anticipated effects of the proposed action and the measures needed to avoid, minimize, mitigate, or offset such effects.

Supplemental Consultation

The USDA must reinitiate EFH consultation with NOAA Fisheries if the proposed action is substantially revised in a way that may adversely affect EFH, or if new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations [50 C.F.R. 600.920(k)].

DATA QUALITY ACT DOCUMENTATION AND PRE-DISSEMINATION REVIEW

Section 515 of the Treasury and General Government Appropriations Act of 2001 (Public Law 106-554) ("Data Quality Act") specifies three components contributing to the quality of a document. They are utility, integrity, and objectivity. This section of the Biological Opinion addresses these Data Quality Act (DQA) components, documents compliance with the DQA, and certifies that this Opinion has undergone pre-dissemination review.

Utility: This document records the results of an interagency consultation between NOAA Fisheries and the USDA Rural Development. The information presented in this document is useful to both of these agencies, the Seal Rock Water District, the residents of Lincoln County, Oregon, and the general public. This consultation helps to fulfill multiple legal obligations of the named agencies. The information is also useful and of interest to the general public as it describes the manner in which public trust resources are being managed and conserved. The information is beneficial to citizens in Lincoln County because the underlying project affects natural resources at a site within the county. The information presented in this document and used in the underlying consultation represents the best available scientific and commercial information and has been improved through interaction with the consulting agency.

Individual copies were provided to the above-listed entities. This consultation will be posted on the NOAA Fisheries NW Region web site (<http://www.nwr.noaa.gov>). The format and naming adheres to conventional standards for style.

Integrity: This consultation was completed on a computer system managed by NOAA Fisheries in accordance with relevant information technology security policies and standards set out in Appendix III, "Security of Automated Information Resources," Office of Management and Budget Circular A-130; the Computer Security Act; and the Government Information Security Reform Act.

Objectivity:

Information Product Category: Natural Resource Plan.

Standards: This consultation and supporting documents are clear, concise, complete, and unbiased; and were developed using commonly accepted scientific research methods. They adhere to published standards including the NOAA Fisheries ESA Consultation Handbook, ESA

Regulations, 50 C.F.R. 402.01 *et seq.*, and the MSA implementing regulations regarding Essential Fish Habitat, 50 C.F.R. 600.920(j).

Best Available Information: This consultation and supporting documents use the best available information, as referenced in the literature cited section. The analyses in this biological opinion/EFH consultation contain more background on information sources and quality.

Referencing: All supporting materials, information, data and analyses are properly referenced, consistent with standard scientific referencing style.

Review Process: This consultation was drafted by NOAA Fisheries staff with training in ESA and MSA implementation, and reviewed in accordance with Northwest Region ESA quality control and assurance processes.

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